

REMARKS

The present invention relates to a cold start fuel control system for an internal combustion chamber of the type having a plurality of combustion chambers. The cold start fuel control system includes a cold start fuel injector having both an inlet and an outlet.

The cold start fuel injector is fluidly connected with a source of fuel and has its outlet open to an auxiliary intake manifold having an interior chamber. Consequently, upon activation of the cold start fuel injector, the cold start fuel injector provides a fuel/air mixture to the interior chamber of the auxiliary intake manifold.

A control orifice member is associated with each combustion chamber of the engine. Each control orifice member, furthermore, is positioned downstream from the inlet of the primary intake manifold and adjacent its associated combustion chamber. Each control orifice member regulates the amount of fuel/airflow mixture through the control orifice and enables fine tuning of the fuel delivery system.

The system further includes a plurality of fuel feed tubes so that one fuel feed tube extends between the auxiliary intake manifold chamber and each control orifice member. In practice, the fuel feed tubes are relatively short in length, thus enabling accurate delivery of the fuel/air mixture from the auxiliary intake manifold and to the engine combustion chambers.

The Patent Examiner, however, has rejected previously submitted claim 1, i.e. the first of two independent claims, as anticipated by Hunt '826. In his rejection, the Patent Examiner noted on page 4 of his November 5, 2004 Office Action, that:

“The Applicant will note that these claims do not require separate lines to the injector and separate flow orifices.”

Claim 1, one of the two original claims, has now been carefully amended in order to overcome that deficiency in previously submitted claim 1. More specifically, amended claim 1

clearly defines the control orifice and the fuel feed tubes which extend between the auxiliary intake manifold and each control orifice. As such, claim 1 now clearly defines the separate lines between the auxiliary or cold start fuel injector and the separate flow orifice members.

The patent specification has been amended to provide support for the amendments to claim 1. In addition, the term “control orifice” has been changed to “control orifice member” at the appropriate locations, both in the patent specification as well as the patent claims. This amendment reflects that the control orifice members each comprise a discrete item, rather than simply an opening. Although Applicant believes that this was clear from the patent specification as originally drafted, the amendments to claim 1 and the patent specification are designed to eliminate any ambiguity in this regard.

Applicant respectfully submits that claim 1 patentably defines Applicant’s invention over the prior art references of record and it is, therefore, allowable. More specifically, there is absolutely no suggestion in the Hunt ‘826 patent of an auxiliary manifold with the fuel feed tubes and the separate fuel flow orifice members, as is now clearly defined in claim 1. Furthermore, the Examiner’s secondary reference to Abidin et al. does not correct this deficiency of the Hunt ‘826 patent. In particular, Abidin et al. neither teaches Applicant’s provision of the separate fuel control flow orifice members, nor does Abidin teach or suggest a separate fuel feed tube extending between an auxiliary manifold and each control orifice in the fashion now defined in claim 1. Instead, Abidin uses a tree-like fuel distribution structure.

Claim 22, i.e. the second independent rejected claim, has been amended in a fashion essentially the same as claim 1. Consequently, the above comments are equally applicable to claim 22 and, for that reason, Applicant respectfully submits that claim 22 also patentably defines Applicant’s invention over Hunt ‘826, alone, or when combined with Abidin et al.

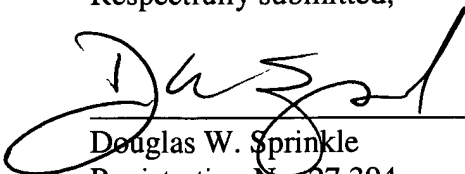
New claim 28 incorporates the limitations of previously submitted claim 3 and is, therefore, allowable as indicated by the Patent Examiner. New claim 29 incorporates all of the limitations of previously submitted claim 7 and is, therefore, allowable as indicated by the Patent Examiner. New claim 30 incorporates all of the limitations of previously submitted claim 15 and is, therefore, allowable, as indicated by the Patent Examiner. New claim 31 incorporates all of the limitations of previously submitted claim 25 and is, therefore, allowable, as indicated by the Patent Examiner.

A Terminal Disclaimer is submitted concurrently herewith to negate the Patent Examiner's provisional rejection of the claims in this case as unpatentable for double patenting, obviousness type.

Proposed drawing corrections for both Figures 1 and 2 are also submitted herewith for approval by the Patent Examiner. Upon formal allowance, formal copies of these revised patent drawings will, of course, be submitted.

In view of the foregoing, Applicant respectfully submits that this case is in condition for formal allowance and such action is respectfully solicited.

Respectfully submitted,



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